in our patient series. Our data definitely supports the use of LAA closure in high risk patients.

**CATEGORIES STRUCTURAL:** Left Atrial Appendage Exclusion

**KEYWORDS** Antiplatelet therapy, Left atrial appendage, occlude device, Stroke

## TCT-725

### Changes in left atrial appendage dimensions following volume loading during percutaneous left atrial appendage closure

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**BACKGROUND** Percutaneous LAA closure is increasingly performed in patients with atrial fibrillation and contraindications to anticoagulation to lower their stroke and systemic embolism risk. The safety and efficacy of LAA closure relies on accurate device sizing, which necessitates accurate measurement of LAA dimensions. LAA size may change with volume status, and as patients are fasting for these procedures, intraprocedural measurements may not be representative of true LAA size. The objective of this study was to determine whether volume loading alters the left atrial appendage (LAA) dimensions in patients undergoing percutaneous LAA closure.

**METHODS** Thirty-one consecutive patients undergoing percutaneous LAA closure who received volume loading during the procedure were included in this study. After an overnight fast and induction of general anesthesia, patients had their LAA dimensions (orifice and depth) measured by transesophageal echocardiography before and after 500-1000ml of intravenous normal saline, aiming for a left atrial pressure >12mmHg.

**RESULTS** Successful implantation of LAA closure device was achieved in all patients. The average orifice size of the LAA at baseline was 20.5mm at 90 degrees, and 22.5mm at 135 degrees. Following volume loading, the average orifice size of the LAA increased to 22.5mm at 90 degrees, and 23.5mm at 135 degrees. The average increase in orifice was 1.9mm ($p<0.0001$). The depth of the LAA also increased by an average of 2.5mm after volume loading ($p<0.0001$).

**CONCLUSIONS** Intraprocedural volume loading with saline increased the LAA orifice and depth dimensions during LAA closure. Operators should consider optimizing the left atrial pressure with volume loading before final device sizing.

**CATEGORIES STRUCTURAL:** Left Atrial Appendage Exclusion

**KEYWORDS** Left atrial appendage, Left atrial appendage closure, TEE

## TCT-726

### Incidence, Characteristics, and Clinical Course of Left Atrial Thrombus Attached to Watchman Device in Atrial Fibrillation Patients

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**BACKGROUND** Left atrial (LA) appendage closure using Watchman device was reported to be effective for atrial fibrillation (AF) patients to prevent stroke, systemic embolism, and cardiovascular death compared with warfarin therapy. However, there are some cases with thrombus formation in LA attached to Watchman device (Figure). In this study, we investigated incidence, characteristics, and clinical course of LA thrombus attached to Watchman device.

**METHODS** From June 2006 to March 2014, consecutive 119 AF patients underwent the Watchman procedure in our institute. Transesophageal echocardiographic (TEE) follow-up was scheduled at 45 days, 6 months, and 12 months after procedure. The incidence of thrombus formation attached to the device in TEE was evaluated. Furthermore, the patient characteristics and clinical course were also investigated.

**RESULTS** Follow-up TEE identified LA thrombus attached to Watchman device in 4 patients (3.4%). The prevalence of chronic AF was significantly higher in patients with thrombus than those without thrombus (100% vs. 40.0%, $p = 0.03$). Mean CHADS2 score tended to be higher in patients with thrombus ($3.8 \pm 0.6$ vs. $2.5 \pm 0.1$, $p = 0.06$). The thrombus type and anticoagulation status of each patient were summarized in Table. Warfarin therapy was restarted or continued after detection of the thrombus. The thrombus was disappeared in all patients at subsequent follow-up TEE, and they can discontinue warfarin therapy within 6 months after the detection of thrombus. The mean follow-up duration was $1456 \pm 546$ days, and there were no death, stroke, and systemic embolism events during the follow-up period.

Figure.

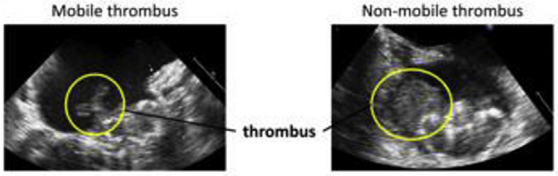


Table.

| | Age | Sex | Timing | Type | Size | Anticoagulation |
|---|---|---|---|---|---|---|
| Case 1 | 78 | Male | 45 days | Non-mobile | 6 × 15mm | WF |
| Case 2 | 71 | Female | 45 days | Non-mobile | 17 × 11mm | None |
| Case 3 | 56 | Male | 6 months | Mobile | 13 × 15mm | ASA |
| Case 4 | 61 | Female | 12 months | Non-mobile | 15 × 10mm | Clopidogrel |

WF, warfarin; ASA, aspirin.

**CONCLUSIONS** Thrombus formation attached to Watchman device can be observed especially in chronic AF patients with higher stroke risk scores. Even after the detection of thrombus, short-term warfarin therapy is effective and the clinical outcomes would be favorable.

**CATEGORIES STRUCTURAL:** Left Atrial Appendage Exclusion

**KEYWORDS** Atrial fibrillation, Thrombus, Watchman

## TCT-727

### Canadian Multi-Center Experience with WATCHMAN for Percutaneous Left Atrial Appendage Closure

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**BACKGROUND** There is limited data with WATCHMAN for left atrial appendage (LAA) closure in patients with nonvalvular atrial fibrillation (AF) and contraindications to anticoagulation. The purpose of this study was to evaluate the safety and efficacy of WATCHMAN in our early Canadian experience.

**METHODS** We report our consecutive series of patients who underwent WATCHMAN implantation at 4 Canadian centers (Vancouver General Hospital, Montreal Heart Institute, Hamilton General Hospital and Ottawa Heart Institute). Indications for LAA closure were CHADS2≥1, and contraindication/intolerance to or failure on anticoagulation. All cases were done under general anesthesia and transesophageal echocardiography (TEE) guidance. Majority of patients received dual antiplatelet therapy (DAPT) for 3-6 months after implant. Follow-up TEE was typically performed at 1-6 months post-procedure.

**RESULTS** Ninety patients underwent LAA closure with WATCHMAN from May 2013 to June 2015. The mean age was $75.0 \pm 7.9$. The mean CHADS2 score was $2.9 \pm 1.2$, CHADS-VASc score was $4.4 \pm 1.5$, and HASBLED score was $3.2 \pm 1.2$. Permanent AF was present in 66.7% and paroxysmal AF in 33.3%. Indications for LAA closure were prior bleeding in 81 patients (90.0%; 74 major bleeding, and 7 minor bleeding), 9 were deemed high-risk for bleeding (renal failure, cirrhosis, labile INR, esophageal ulcers, on DAPT), and 1 with recurrent strokes on warfarin. Procedural success was 97.8% (88/90), with one device embolization (snared percutaneously) and one implant failure due to inadequate LAA depth. There was no procedural stroke/TIA, death, MI, or cardiac tamponade. There were 3 major bleeding that required transfusions. Mean hospital stay was $1.4 \pm 1.8$ days. Antithrombotic therapy post-implant included DAPT in 66/90 (73.3%), anticoagulant in 21/90 (5 warfarin, 16 direct anticoagulant), and aspirin alone in 3/90. Follow-up TEE was available in 53 patients, there was 1 device-associated thrombus (treated successfully with